

**What is claimed is:**

1. An apparatus for supporting a configuration of a storage system including an upper level device with at least one port, an input/output device with at least one port and a path control device provided between the upper level device and the input/output device, comprising:
  - a first information acquisition unit which acquires information about the upper level device, the input/output device and the path control device;
  - a second information acquisition unit which acquires information about a physical connection among the upper level device, the input/output device and the path control device;
  - a path information generation unit which generates path information about a logical path to be established between the upper level device and the input/output device through the path control device based on the information acquired by said first and the second information acquisition units;
  - an instruction preparation unit which prepares instruction to control conditions of the upper level device, the input/output device and the path control device based on the path information generated by said

path information generation unit; and

a transmission unit which transmits the instruction prepared by said instruction preparation unit to the upper level device, the input/output device  
5 and the path control device.

2. The apparatus according to claim 1, further comprising

an allocation unit which allocates temporary port  
10 information to respective ports provided in the upper level device and the input/output device, wherein  
said path information generation unit generates the path information using the temporary port information.

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3. The apparatus according to claim 2, further comprising

an inquiry unit which inquires port information of respective ports provided in an upper level device  
20 and an input/output device provided in an actually configured storage system, wherein

said path information generation unit replaces the temporary port information being used in the previously prepared path information with actual port information  
25 obtained by the inquiry.

4. The apparatus according to claim 1, wherein  
said path information generation unit detects a  
logical path that can be established between the upper  
5 level device and the input/output device based on the  
information acquired by said first and the second  
information acquisition units and generates path  
information; and  
said instruction preparation unit prepares an  
10 instruction to establish the detected logical path.

5. The apparatus according to claim 4, wherein  
said instruction preparation unit prepares an  
instruction to establish all the detected logical paths.

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6. The apparatus according to claim 1, further  
comprising

a third information acquisition unit which  
acquires information that is related to a virtual data  
20 area to be prepared in the upper level device, wherein

said instruction preparation unit prepares an  
instruction to secure a data area corresponding to the  
virtual data area in the input/output device.

25 7. The apparatus according to claim 6, wherein

said instruction preparation unit prepares instructions to establish a logical path between an upper level device where the virtual data area should be prepared and an input/output device where the corresponding data area should be secured.

8. The apparatus according to claim 1, wherein said first and second information acquisition units provide interfaces allowing a user to input information.

9. An apparatus for supporting a configuration of a storage system including an upper level device with a plurality of ports, an input/output device with a plurality of ports and a path control device provided between the upper level device and the input/output device, comprising:

a first information acquisition unit which acquires information about the upper level device, the input/output device and the path control device;

a second information acquisition unit which acquires information about a physical connection among the upper level device, the input/output device and the path control device;

a path information generation unit which generates

path information about a plurality of logical paths to be established between the upper level device and the input/output device through the path control device based on the information acquired by said first and the second  
5 information acquisition units;

an instruction preparation unit which prepares instruction to control conditions of the upper level device, the input/output device and the path control device based on the path information generated by said  
10 path information generation unit; and

a transmission unit which transmits the instruction prepared by said instruction preparation unit to the upper level device, the input/output device and the path control device.

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10. An apparatus for supporting a configuration of a storage system including an upper level device with at least one port, a plurality of input/output devices each of which is provided with at least one port and a path  
20 control device provided between the upper level device and the plurality of input/output devices, comprising:

a first information acquisition unit which acquires information about the upper level device, the input/output devices and the path control device;

25 a second information acquisition unit which

acquires information about a physical connection among the upper level device, the input/output devices and the path control device;

5 a third information acquisition unit which acquires information about a virtual data region to be prepared in the upper device and information designating one of input/output devices in which a data area corresponding to the virtual data area should be secured;

10 a path information generation unit which generates path information about a logical path to be established between the upper level device and the designated input/output device through the path control device based on the information acquired by said first, second and third information acquisition units;

15 an instruction preparation unit which prepares an instruction to control conditions of the upper level device, the input/output devices and the path control device based on the path information generated by said path information generation unit; and

20 a transmission unit which transmits an instruction prepared by said instruction preparation unit to the upper level device, the input/output devices and the path control device.

25 11. A method for supporting a configuration of a storage

system including an upper level device with at lease one port, an input/output device with at least one port and a path control device provided between the upper level device and the input/output device, comprising:

- 5       acquiring information about the upper level device, the input/output device and the path control device;  
          acquiring information about a physical connection among the upper level device, the input/output device and the path control device;
- 10       generating path information about a logical path to be established between the upper level device and the input/output device through the path control device based on the acquired information;  
          preparing an instruction to control conditions of
- 15       the upper level device, the input/output device and the path control device based on the path information; and  
          transmitting the instruction to the upper level device, the input/output device and the path control device.

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12.   A computer readable medium storing a program for supporting a configuration of a storage system including an upper level device with at lease one port, an input/output device with at least one port and a path
- 25   control device provided between the upper level device

and the input/output device, said program enables a computer to provide:

a first information acquisition unit which acquires information about the upper level device, the input/output device and the path control device;

a second information acquisition unit which acquires information about a physical connection among the upper level device, the input/output device and the path control device;

a path information generation unit which generates path information about a logical path to be established between the upper level device and the input/output device through the path control device based on the information acquired by said first and the second information acquisition units;

an instruction preparation unit which prepares instruction to control conditions of the upper level device, the input/output device and the path control device based on the path information generated by said path information generation unit; and

a transmission unit which transmits the instruction prepared by said instruction preparation unit to the upper level device, the input/output device and the path control device.



13. The computer readable medium according to claim 12, said program further enables the computer to provide:  
an allocation unit which allocates temporary port information to respective ports provided in the upper  
5 level device and the input/output device, wherein  
said path information generation unit generates the path information using the temporary port information.
- 10 14. The computer readable medium according to claim 13, said program further enables the computer to provide:  
an inquiry unit which inquires port information of respective ports provided in an upper level device and an input/output device provided in an actually  
15 configured storage system, wherein  
said path information generation unit replaces the temporary port information being used in the previously prepared path information with actual port information obtained by the inquiry.
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15. The computer readable medium according to claim 12, wherein:  
said path information generation unit detects a logical path that can be established between the upper  
25 level device and the input/output device based on the

information acquired by said first and the second information acquisition units and generates path information; and

said instruction preparation unit prepares an  
5 instruction to establish the detected logical path.

16. The computer readable medium according to claim 15, wherein

said instruction preparation unit prepares an  
10 instruction to establish all the detected logical paths.

17. The computer readable medium according to claim 12, said program further enables the computer to provide:

a third information acquisition unit which  
15 acquires information that is related to a virtual data area to be prepared in the upper level device, wherein

said instruction preparation unit prepares an instruction to secure a data area corresponding to the virtual data area in the input/output device.

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18. The computer readable medium according to claim 17, wherein

said instruction preparation unit prepares instructions to establish a logical path between an upper  
25 level device where the virtual data area should be

prepared and an input/output device where the corresponding data area should be secured.

19. The computer readable medium according to claim  
5 12, wherein

said first and second information acquisition units provide interfaces allowing a user to input information.

10 20. A computer readable medium storing a program for supporting a configuration of a storage system including an upper level device with a plurality of ports, an input/output device with a plurality of ports and a path control device provided between the upper level device  
15 and the input/output device, said program enables a computer to provide:

a first information acquisition unit which acquires information about the upper level device, the input/output device and the path control device;

20 a second information acquisition unit which acquires information about a physical connection among the upper level device, the input/output device and the path control device;

a path information generation unit which generates  
25 path information about a plurality of logical paths to

be established between the upper level device and the input/output device through the path control device based on the information acquired by said first and the second information acquisition units;

5           an instruction preparation unit which prepares instruction to control conditions of the upper level device, the input/output device and the path control device based on the path information generated by said path information generation unit; and

10           a transmission unit which transmits the instruction prepared by said instruction preparation unit to the upper level device, the input/output device and the path control device.

15   21.   A computer readable medium storing a program for supporting a configuration of a storage system including an upper level device with at least one port, a plurality of input/output devices each of which is provided with at least one port and a path control device provided  
20   between the upper level device and the plurality of input/output devices, said program enables a computer to provide:

          a first information acquisition unit which acquires information about the upper level device, the  
25   input/output devices and the path control device;

a second information acquisition unit which acquires information about a physical connection among the upper level device, the input/output devices and the path control device;

5 a third information acquisition unit which acquires information about a virtual data region to be prepared in the upper device and information designating one of input/output devices in which a data area corresponding to the virtual data area should be secured;

10 a path information generation unit which generates path information about a logical path to be established between the upper level device and the designated input/output device through the path control device based on the information acquired by said first, second and  
15 third information acquisition units;

an instruction preparation unit which prepares an instruction to control conditions of the upper level device, the input/output devices and the path control device based on the path information generated by said  
20 path information generation unit; and

a transmission unit which transmits an instruction prepared by said instruction preparation unit to the upper level device, the input/output devices and the path control device.

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22. An apparatus for supporting a configuration of a storage system including an upper level device with at least one port, an input/output device with at least one port and a path control device provided between the upper level device and the input/output device, comprising:

first information acquisition means for acquiring information about the upper level device, the input/output device and the path control device;

10 second information acquisition means for acquiring information about a physical connection among the upper level device, the input/output device and the path control device;

path information generation means for generating  
15 path information about a logical path to be established between the upper level device and the input/output device through the path control device based on the information acquired by said first and the second information acquisition means;

20 instruction preparation means for preparing instruction to control conditions of the upper level device, the input/output device and the path control device based on the path information generated by said path information generation means; and

25 transmission means for transmitting the

instruction prepared by said instruction preparation means to the upper level device, the input/output device and the path control device.